Communication Plan:
We have been discussing the logistics of the project through texting and sending pictures of diagrams if needed

technologies used:
gitHub-- As files are finished, they will be uploaded to a central repository

Responsibility distribution: //using last names because first names are same

(Graph Class) [Beeston]
(Path Class)[Hayden]
(Driver)[Beeston] and/or [Hayden]
(generatePaths)[Hayden]

Timeline:
Saturday 5/2: Graph and Path classes finished
Tuesday 5/5: Main driver finished

Solution Design:

(Graph Class)
Description: Adjacency matrix based
<u>private:</u>
int numVertex;
ItemType vertices[numVertex]; //names of vertices, change to list of strings rather than template array?

int adjMatrix[numVertex][numVertex]; //Use pointer to dynamic memory instead of array? allows graph to change size

<u>public:</u>
Graph(int numVertex, ItemType newVertices[]);
Graph(Graph &other);
setVertex(int vertexIndex, ItemType newVertex, int connections[]);
ItemType getVertexAt(int index);
int TraversePath(Path p); //returns weight of path after traversal
//Above functions/data are critical for the program, other required functionality will be added later.

(Path Class)
Description: Bare bones-- contains int array with each element corresponding to a vertex in a graph.

```
private:
    int         array[6] = {0,0,0,0,0,0};     //{0,x,x,x,x,0} Reno = index 0
public:
    Path(int pathIntArray)
    void    setAtIndex(int index);
    int     getDataAtIndex(int index);
```

(Main file/driver)

```
in main():
Graph cityPaths;
Stack<Path> stackOfPaths;
Path ShortestPath;     //will store shortest path
int ShortestPathCost; //store shortest path cost, set using Graph::TraversePath()

Functions:
Graph  ReadGraphFromFile(std::string filename);    //insert data from input file into graph object
Stack<Path>   generatePaths(Graph g);       //Generate all paths from graph, return stack
Path    findShortestPath(Graph g, Stack<Path> s);   //Returns shortest path of stack
void    displayPaths(Stack<path> s);            //Displays paths
bool    writeToFile(std::string filename);        //Writes final data to file
```